

# Purchase Order Receipt Listing

Tuesday, February 14, 2017 4:09:59 PM

All amounts are calculated in domestic currency.

All Vendors PO ID PO35245 All Receipt Dates All Line Item Types  
All Item ID/GL/WOs All Rec. Employees All Currencies  
Grouped by Vendor ID

Purchase Order ID/ Curr Type	Line Nbr/ Insp Req	Project ID	Reference/ Description/ Cert Std	PO U/M / Stock U/M	Required Date Required Qty	Recv Date/ Recv Emp	Recv Qty (PO U/M)	Cost Per Unit/ Recv Value	Inspected Qty/ Rejected Qty (PO U/M)	MRB Qty/ MRB Reject Qty	Book Amt
<b>Vendor ID/Vendor Name</b>											
PO35245	2		VU-TW/M001 TW Metals								
USD	No		M304TR0.500W.049 f		2/17/2017	2/14/2017	20.0000		0.0000	0	\$0.00
			304 RD Tube .500 x .049W		20.0000	PLOU01			0.0000	0	
			m136846								
	3		M304TR0.750W.049 f		2/17/2017	2/14/2017	80.0000		0.0000	0	\$0.00
	No		304 RD Tube .750 x .049W		80.0000	PLOU01			0.0000	0	
			m136846								
	4		M6061T6T0.375W.05 f		2/17/2017	2/14/2017	48.0000		0.0000	0	\$0.00
	No		6061-T6 RD Tube .375 x.058W		48.0000	PLOU01			0.0000	0	
			m136846								
	5		M6061T6T0.625W.12 f		2/17/2017	2/14/2017	24.0000		0.0000	0	\$0.00
	No		6061-T6 RD Tube 0.625 X.125W		24.0000	PLOU01			0.0000	0	
			m136846								
	7		M304TR0.375W.035 f		2/17/2017	2/14/2017	20.0000		0.0000	0	\$0.00
	No		304 TUBING .375 x .035W		20.0000	PLOU01			0.0000	0	
			m136846								
	8		M304TR0.375W.065 f		2/17/2017	2/14/2017	20.0000		0.0000	0	\$0.00
	No		304 RD Tube .375 x .065W		20.0000	PLOU01			0.0000	0	
			m136846								
	9		M4130NT0.500W.04 f		2/17/2017	2/14/2017	20.0000		0.0000	0	\$0.00
	No		4130 RD Tube .500 x.049W		20.0000	PLOU01			0.0000	0	
			m136846								

Purchase Order ID/ Curr Type	Line Nbr/ Insp Req	Project ID	Reference/ Description/ Cert Std	PO U/M / Stock U/M	Required Date Required Qty	Rev Date/ Rev Emp	Rev Qty (PO U/M)	Cost Per Unit/ Recv Value	Inspected Qty/ Rejected Qty (PO U/M)	MRB Qty/ MRB Reject Qty	Book Amt
<b>Vendor ID/Vendor Name</b>											
PO35245	10		VU-TWMM001 TW Metals								
			M4130NT1.000W.12 f		2/17/2017	2/14/2017	24.0000		0.0000	0	\$0.00
			0								
USD	No		4130 RD Tube 1.00 x f		20.0000	PLOU01			0.0000	0	
			.120wall								
			m136846								
	11		71401-45		2/17/2017	2/14/2017	1.0000		0.0000	0	\$0.00
	No		PROCUREMENT		1.0000	PLOU01			0.0000	0	
			QUALITY								
			CLAUSES								
			m136846								
<b>Total Received Quantity:</b> <b>Total Qty to Inspect (PO U/M):</b> <b>Total Reject Quantity:</b> <b>Total Receipt Value:</b> <b>Total Balance Due Quantity:</b>											
											257.0000
											0.0000
											0.0000
											\$0.00
											0.0000



O'Neal High-Performance Metals Group



Packing  
Slip

ORDER NO.: 60625241

FROM: CRAN

PAGE 1

CUST NUMBER: 1203820  
SOLD TO:  
DART AEROSPACE LTD  
1270 ABERDEEN ST  
HAWKESBURY ON  
CANADA

NET WGT:  
  
  
  
  
CN K6A 1K7

81.486 REQ.DATE: 02/15/17 CONFIRMED  
SHIP TO:  
DART AEROSPACE LTD  
1270 ABERDEEN ST  
HAWKESBURY ON  
ONTARIO CANADA  
CN K6A 1K7

SALESPERSON: DONNA SMALLEY  
TERMS: NET 30 DAYS  
F.O.B.: SHIPPING POINT  
CUST ORD NO.: PO35245

SHIP BY: 02/10/17  
VIA: COMMON CARRIER  
FREIGHT: PREPAID  
RELEASE NO.:  
RECEIVING PHONE:

LINE ITEM DESCRIPTION WIDTH LENGTH  
0001 36506 SMLS CD 304/L A269 1/2 OD X .049 WA 20' ML

CLN#	ORD QTY	INVOICE QTY	SHIPPED QTY	WT
	20.000 FT	20.000 FT	20.000 FT	4.718

PCS  
1

\*\* 1 TEST REPORTS REQUIRED \*\*  
\*\* 1 CERTS REQUIRED \*\*

ECCN: 2B999.g Export License: NLR Expiration Date: 0/00/00  
PO:49339077 HT:YX1506712 PC: 1 CUSTOMER QTY: 20.000 UOM FT  
MLT:CHINA MFG:CHINA SLB/CL:9-116

0002 36860 SMLS CD 304/L A269 3/4 OD X .049 WA 20' CL

CLN#	ORD QTY	INVOICE QTY	SHIPPED QTY	WT
	80.000 FT	80.000 FT	80.000 FT	29.338

PCS  
4

\*\* 1 TEST REPORTS REQUIRED \*\*  
\*\* 1 CERTS REQUIRED \*\*

ECCN: 2B999.g Export License: NLR Expiration Date: 0/00/00  
PO:49342471 HT:YX1501783 PC: 4 CUSTOMER QTY: 80.000 UOM FT  
MLT:CHINA MFG:CHINA SLB/CL:11-63

0003 41952 D6061-T6 3/8 OD X .058 WA 12 FT ML

CLN#	ORD QTY	INVOICE QTY	SHIPPED QTY	WT
	48.000 FT	48.000 FT	48.000 FT	3.254

PCS  
4

\*\* 1 TEST REPORTS REQUIRED \*\*  
\*\* 1 CERTS REQUIRED \*\*

ECCN: EAR99 Export License: NLR Expiration Date: 0/00/00  
PO:49361230 HT:1180968 PC: 4 CUSTOMER QTY: 48.000 UOM FT  
MLT:UNITED STATES MFG:UNITED STATES SLB/CL:438268

SP17-02-14

THANK YOU FOR THIS ORDER

TERMS AND CONDITIONS APPLICABLE TO THE SALE OF THESE  
PRODUCTS ARE SET FORTH ON OUR WEBSITE FOR YOUR CAREFUL  
REVIEW.  
<http://www.twmetals.com/invoice-terms.html>



O'Neal High-Performance Metals Group



**Packing Slip**

ORDER NO.: 60625241 FROM: CRAN PAGE 2

CUST NUMBER: 1203820 NET WGT: 81.486 REQ.DATE: 02/15/17 CONFIRMED  
SOLD TO: SHIP TO:  
DART AEROSPACE LTD DART AEROSPACE LTD  
1270 ABERDEEN ST 1270 ABERDEEN ST  
HAWKESBURY ON HAWKESBURY ON  
CANADA CN K6A 1K7 ONTARIO CANADA CN K6A 1K7

SALESPERSON: DONNA SMALLEY SHIP BY: 02/10/17  
TERMS: NET 30 DAYS VIA: COMMON CARRIER  
F.O.B.: SHIPPING POINT FREIGHT: PREPAID  
CUST ORD NO.: PO35245 RELEASE NO.:  
RECEIVING PHONE:

LINE ITEM DESCRIPTION WIDTH LENGTH  
0004 42588 D6061-T6 5/8 OD X .125 WA 12' FT ML

CLN#	ORD QTY	INVOICE QTY	SHIPPED QTY	WT
	24.000 FT	24.000 FT	24.000 FT	5.541

PCS  
2

\*\* 1 TEST REPORTS REQUIRED \*\*  
\*\* 1 CERTS REQUIRED \*\*

ECCN: EAR99 Export License: NLR Expiration Date: 0/00/00  
PO:49360917 HT:F002299760001 PC: 2 CUSTOMER QTY: 24.000 UOM FT  
MLT:UNITED STATES MFG:UNITED STATES SLB/CL:221973

0005 36225 SMLS CD 304/L A269 3/8 X .035 WA 20' ML

CLN#	ORD QTY	INVOICE QTY	SHIPPED QTY	WT
	20.000 FT	20.000 FT	20.000 FT	2.542

PCS  
1

\*\* 1 TEST REPORTS REQUIRED \*\*  
\*\* 1 CERTS REQUIRED \*\*

ECCN: 2B999.g Export License: NLR Expiration Date: 0/00/00  
PO:49354071 HT:YX1509583 PC: 1 CUSTOMER QTY: 20.000 UOM FT  
MLT:CHINA MFG:CHINA SLB/CL:10-46

0006 36311 SMLS CD 304/L A269 3/8 OD X .065 WA 20' ML

CLN#	ORD QTY	INVOICE QTY	SHIPPED QTY	WT
	20.000 FT	20.000 FT	20.000 FT	4.303

PCS  
1

\*\* 1 TEST REPORTS REQUIRED \*\*  
\*\* 1 CERTS REQUIRED \*\*

ECCN: 2B999.g Export License: NLR Expiration Date: 0/00/00  
PO:49329273 HT:YX1410664 PC: 1 CUSTOMER QTY: 20.000 UOM FT  
MLT:CHINA MFG:CHINA SLB/CL:4-34

SP17-0244

**THANK YOU FOR THIS ORDER**

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O'Neal High-Performance Metals Group



**Packing  
Slip**

ORDER NO.: 60625241

FROM: CRAN

PAGE 3

CUST NUMBER: 1203820 NET WGT: 81.486 REQ.DATE: 02/15/17 CONFIRMED  
SOLD TO: SHIP TO:  
DART AEROSPACE LTD DART AEROSPACE LTD  
1270 ABERDEEN ST 1270 ABERDEEN ST  
HAWKSBURY ON HAWKSBURY ON  
CANADA CN K6A 1K7 ONTARIO CANADA CN K6A 1K7

SALESPERSON: DONNA SMALLEY SHIP BY: 02/10/17  
TERMS: NET 30 DAYS VIA: COMMON CARRIER  
F.O.B.: SHIPPING POINT FREIGHT: PREPAID  
CUST ORD NO.: PO35245 RELEASE NO.:  
RECEIVING PHONE:

LINE ITEM DESCRIPTION WIDTH LENGTH  
0007 31954 SMLS CD 4130 RD 6736 1/2 X .049 17/24 FT

CLN#	ORD QTY	INVOICE QTY	SHIPPED QTY	WT
	20.000 FT	20.000 FT	20.000 FT	4.718

PCS  
1

\*\* 1 TEST REPORTS REQUIRED \*\*

\*\* 1 CERTS REQUIRED \*\*

ECCN: 9A991.d Export License: NLR Expiration Date: 0/00/00  
PO:49355846 HT:251772 PC: 1 CUSTOMER QTY: 20.000 UOM FT  
MLT:GERMANY MFG:GERMANY SLB/CL:1627804

0008 33364 SMLS CD 4130 RD 6736 1 X .120 17/24 FT

CLN#	ORD QTY	INVOICE QTY	SHIPPED QTY	WT
	20.000 FT	24.000 FT	24.000 FT	27.072

PCS  
1

\*\* 1 TEST REPORTS REQUIRED \*\*

\*\* 1 CERTS REQUIRED \*\*

ECCN: 9A991.d Export License: NLR Expiration Date: 0/00/00  
PO:49354259 HT:MM16101444 PC: 1 CUSTOMER QTY: 24.000 UOM FT  
MLT:UNITED STATES MFG:UNITED STATES SLB/CL:143275

BROKERS KUEHNE AND NAGEL LTD

AREA	TYPE OF PKG	PKGS	GRS WEIGHT	WIDTH	LENGTH	HGHT
B	CARTON	1.000	86.000		24.0000	

BY: CI  
RT 000-

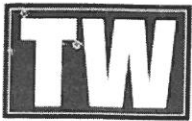
UNLOAD TYPE: NONE SPECIFIED

DATE SHIPPED \_\_\_\_\_

DATE FILLED \_\_\_\_\_

**THANK YOU FOR THIS ORDER**

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O'Neal High-Performance Metals Group



**Packing  
Slip**

ORDER NO.: 60625241

FROM: CRAN

PAGE 4

CUST NUMBER: 1203820 NET WGT:

81.486 REQ.DATE: 02/15/17 CONFIRMED

SOLD TO:

SHIP TO:

DART AEROSPACE LTD

DART AEROSPACE LTD

1270 ABERDEEN ST

1270 ABERDEEN ST

HAWKESBURY ON

HAWKESBURY ON

CANADA

CN K6A 1K7

ONTARIO CANADA

CN K6A 1K7

SALESPERSON:

DONNA SMALLEY

SHIP BY:

02/10/17

TERMS:

NET 30 DAYS

27 ENGLEHARD DRIVE

F.O.B.:

SHIPPING POINT

MONROE TWP

NJ 08831

CUST ORD NO.:

PO35245

VIA:

COMMON CARRIER

FREIGHT:

PREPAID

RELEASE NO.:

RECEIVING PHONE:

"TW Metals MSDS data is available on our web site at [www.twmetals.com](http://www.twmetals.com). MSDS data can be found under the Technical Resources Tab, Product Statistics & Data and the TW Metals MSDS's heading. If you do not have web site access you may telephone 610-458-1300 and we will mail or fax a copy of our current MSDS data to your location."

# "CERTIFICATE OF CONFORMANCE"

"TW Metals certifies that the material supplied on this purchase order and contained in the heat/lot number referenced above has been manufactured, inspected, and tested in accordance with the material specification. These records are on file at TW Metals. Packaging material for shipments to Europe and China consists of manufactured wood products and complies with the European emergency measures for coniferous non-manufactured wood packing material"

Authorized Test Report Clerk

*Cgm Henry*

Date: 2/10/17

These commodities have been exported from the United States in accordance with the U.S. export control laws, export administrations regulations. Diversion contrary to U.S. law prohibited.

**THANK YOU FOR THIS ORDER**

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<http://www.twmetals.com/invoice-terms.html>

**PUFA™**

Producer of Premium Stainless Steel Seamless Tubes

# MILL TEST REPORT

Purchaser.: TW METALS-Carol Stream				Certificate No.: 15-11-181					
Contract No.: TWM P.O.No.: M49339077				Date of Issue.: 2015.11.7					
Commodity: Stainless Steel Seamless Tubes		Specifications: ASTM A213-15/ASME SA213-13/ASTM A269-14e1 EAW							
Process: Cold Drawn				Delivery Condition: OD Polished to 240 Grit					
Steel Grade	Heat Number	Lot Number	Dimensions		Quantity				
TP304/TP304L	YX1506-712	9-116	1/2" x 0.049" x 20'		Pieces	Feet			
					1000	20,000			
Chemical Composition by Weight (%)									
Element	C	Mn	P	S	Si	Cr	Ni	Mo	Co
Requirements	≤0.035	≤2.00	≤0.045	≤0.030	≤1.00	18.00-20.00	8.00-12.00	-	-
Ladle Analysis	0.013	0.65	0.032	0.002	0.32	18.28	8.05	-	-
Product Analysis	0.017	0.61	0.033	0.002	0.28	18.31	8.55	-	-
Mechanical Properties									
Test Item	Elongation (% in 2")		Tensile Strength (PSI)			Yield Strength (PSI)			
			Rm			Rp / 0.2%			
Requirements	≥35		≥75,000			≥30,000			
Test Results	63/64		91,000/92,000			36,000/37,000			
Test Item	Reduction of Area Z (%)	Hardness	Cold Bend Test	Flaring Test	Flattening Test	Flange Test	P.M.I. Test		
Requirements	-	HRB≤80	-	22%	e=0.09	-	-		
Test Results	-	76/78	-	Passed	Passed	-	OK		
Test Item	Eddy Current Test	Air Underwater Pressure Test	Ultrasonic Test	Intergranular Corrosion Test	Macroscopic Inspection				
Requirements	ASTM E 426	-	-	ASTM A262 E	End Cut	Appearance			
Test Results	Passed	-	-	OK	OK	OK			

ISO 9001:2008 Certified by Intertek 110703068

PED Certified by SZUTEST 2195-PED-1526002

## Additional Remarks:

- (1) All tubes annealed to above 1900 Deg F and water quenched below 800 Deg F in 3 minutes
- (2) All tubes tested per ASTM A1016-14
- (3) Materials is NACE MR0103-2007 compliant (per Section 2.5)
- (4) Materials is NACE MR0175/ISO 15156-2003 compliant (per Section 4.2.1)
- (5) In Compliance with EN 10204-3.1
- (6) In Compliance with RoHS Stipulation
- (7) No weld repair performed
- (8) Free from mercury contamination
- (9) Free from radioactive contamination
- (10) Billets melt and pipes/tubes manufactured in China
- (11) All tubes 100% PMI tested
- (12) All tubes 100% Eddy Current tested

**CANNOT CERTIFY COMPLIANCE  
FAR BAA / DFARS BAA / FAR TAA**

By:



*James Shi*

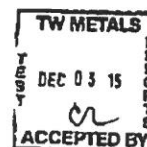
James Shi / Manager

Quality Control Department

We hereby certify that this report is true and correct.

**Shanghai Pufa Stainless Steel Pipe Factory**

No. 59, Shuangye Road, Wanggang, New Pudong District, Shanghai, China



## MILL TEST REPORT

Purchaser.: TW METALS-Cranbury				Certificate No.: 16-1-13					
Contract No.: TWM P.O.No.: M49342471				Date of Issue.: 2016.1.5					
Commodity: Stainless Steel Seamless Tubes				Specifications: ASTM A213-15c/ASME SA213-15/ASTM A269-15a EAW					
Process: Cold Drawn				Delivery Condition: OD Polished to 240 Grit					
Steel Grade	Heat Number	Lot Number	Dimensions	Quantity					
				Pieces	Feet				
TP304/TP304L	YX1501-783	11-63	3/4" x 0.049" x 20'	250	5,000				
Chemical Composition by Weight (%)									
Element	C	Mn	P	S	Si	Cr	Ni	Mo	Co
Requirements	≤0.035	≤2.00	≤0.045	≤0.030	≤1.00	18.00-20.00	8.00-12.00	-	-
Ladle Analysis	0.012	0.68	0.031	0.001	0.37	18.35	8.05	-	-
Product Analysis	0.019	0.70	0.033	0.002	0.39	18.37	8.31	-	-
Mechanical Properties									
Test Item	Elongation (% in 2")	Tensile Strength (PSI) Rm			Yield Strength (PSI) Rp / 0.2%				
Requirements	≥35	≥75,000			≥30,000				
Test Results	65/66	89,000/90,000			34,000/35,000				
Test Item	Reduction of Area Z (%)	Hardness	Cold Bend Test	Flaring Test	Flattening Test	Flange Test	P.M.I. Test		
Requirements	-	HRB≤80	-	22%	e=0.09	-	-		
Test Results	-	75/77	-	Passed	Passed	-	OK		
Test Item	Eddy Current Test	Air Underwater Pressure Test	Ultrasonic Test	Intergranular Corrosion Test	Macroscopic Inspection				
Requirements	ASTM E 426	-	-	ASTM A262 E	End Cut	Appearance			
Test Results	Passed	-	-	OK	OK	OK			

ISO 9001:2008 Certified by Intertek 110703068

PED Certified by SZUTEST 2195-PED-1526002

## Additional Remarks:

- (1) All tubes annealed to above 1900 Deg F and water quenched below 800 Deg F in 3 minutes
- (2) All tubes tested per ASTM A1016-14
- (3) Materials is NACE MR0103-2007 compliant (per Section 2.5)
- (4) Materials is NACE MR0175/ISO 15156-2003 compliant (per Section 4.2.1)
- (5) In Compliance with EN 10204-3.1
- (6) In Compliance with RoHS Stipulation
- (7) No weld repair performed
- (8) Free from mercury contamination
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CANNOT CERTIFY COMPLIANCE  
FAR BAA / DFARS BAA / FAR TAA

By:



James Shi

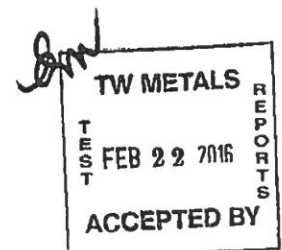
James Shi / Manager

Quality Control Department

We hereby certify that this report is true and correct.

Shanghai Pufa Stainless Steel Pipe Factory

No. 59, Shuangye Road, Wanggang, New Pudong District, Shanghai, China





PRECISION TUBE CO.  
287 WISSAHICKON AVE.  
NORTH WALES PA 19454

Control No: 2839

### CERTIFIED TEST REPORT

CUSTOMER PURCHASE ORDER NO.	CUST. ORD. NO.	PRECISION TUBE P/N
M 49361230 LINE 001	438268	24A037500580006

**SOLD:** TW METALS  
**TO** 235 TUBEWAY  
CAROL STREAM, IL 60188  
UNITED STATES

**SHIP:** TW METALS  
**TO** 235 TUBEWAY  
CAROL STREAM, IL 60188  
UNITED STATES

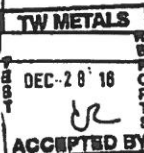
QUANTITY ORD.	DESCRIPTION	QTY. SHIPPED	DATE SHIPPED
4008 FT	METAL - 6061 ALUM TEMPER - T6 SPEC - AMS 4082P AMS-WW-T-700/6C ASTM-B-210-12 LENGTH - 12 FT LGTH TOL +.1250 IN -.0000 IN SHAPE - ROUND FINISH - STRAIGHT EXACT LENGTHS OD .3750 +.0030 -.0030 ID WALL .0580 +.0040 -.0040	4188 FT	12/21/16

### MECHANICAL PROPERTIES

SAMPLE #	TENSILE STRENGTH (P.S.I.)	YIELD STRENGTH (P.S.I.)	ELONGATION IN 2 INCHES (%)	ROCKWELL HARDNESS	AVERAGE GRAIN SIZE (MM.)
1	44,103	37,550	20		

### DESTRUCTIVE TESTS

Comments: FAR BAA COMPLIES, DFARS BAA COMPLIES, FAR TAA COMPLIES



### NON-DESTRUCTIVE TESTS

EDDY CURRENT: PASS

### CHEMICAL COMPOSITION

ALLOY: 6061	HEAT:	TRACEABILITY #: 1180968
		RAW MATL VENDOR: PTC7874 - Kaiser Aluminum
Min	Si 0.40 Fe 0.15 Cu 0.15 Mn 0.80 Mg 0.04 Cr 0.04 Zn 0.04 Ti 0.15 Al Rem.	
Max	0.80 0.70 0.40 0.15 1.20 0.35 0.25 0.15	
OTHER ELEMENTS: 0.05 MAX EACH / 0.15 MAX TOTAL		

We hereby certify that the material has been manufactured and tested in accordance with the requirements of the applicable specifications and descriptions set forth on Precision Tube's sales acknowledgement. During the manufacturing, testing and inspection, the product did not come into direct contact with mercury or any of its compounds, nor with any mercury containing device employing a single boundary containment. Test results indicate that the material is compliant with the current revision of the RoHS Directive (2011/65/EU).

Melted and Manufactured in USA  
QMS Registered to ISO 9001: 2008

By:   
Art Onaitis  
QA Manager

12/21/16  
Page: 1 of 1

C

# KAISER ALUMINUM

FABRICATED PRODUCTS

KAISER ALUMINUM  
FABRICATED PRODUCTS, LLC  
2425 STEVENS DRIVE  
RICHLAND, WA 99352

## CERTIFIED TEST REPORT

<http://Online.KaiserAluminum.com>



CUSTOMER PO NUMBER: PTC7874		CUSTOMER PART NUMBER: SPIRIT-371850		PRODUCT DESCRIPTION: 5.400 LB/PC .500 LB/-0 LB 1.312 OD X .085 WALL ESRT	
KAISER ORDER NUMBER: 320897	LINE ITEM: 001	SHIP DATE: 10/28/2016	KAISER LOT NUMBER: 50751-347	ALLOY: 6061	TEMPER: O
WEIGHT SHIPPED: 10769.000 LB	QUANTITY: 1950.000 PCS	B/L NUMBER: 005171	DIAM/DAF/THKNS:	WIDTH:	LENGTH: 13.984 FT
SHIP TO:  PRECISION TUBE CO 287 WISSAHICKON AVENUE N. WALES, PA 19454 USA			SOLD TO:  MUELLER INDUSTRIES, INC PRECISION TUBE 8285 TOURNAMENT DRIVE STE. 150 MEMPHIS, TN 38125 USA		

### Actual Physical Properties

REFERENCE	DASH#	SAMPLE#	UTS (KSI)	YTS (KSI)	%Elong in 2	HARDNESS	CONDUCT.	BEND
50751-347	0001	0001	18.7	5.9	27.2	NA N/A	N/A	N/A
50751-347	0001	0002	18.4	5.5	27.8	N/A	N/A	N/A
50751-347	0001	0003	18.3	5.6	27.1	N/A	N/A	N/A
50751-347	0001	0004	18.0	5.5	26.7	N/A	N/A	N/A
50751-347	0001	0005	18.3	5.9	27.2	N/A	N/A	N/A
50751-347	0001	0006	17.7	5.6	27.6	N/A	N/A	N/A
50751-347	0001	0007	18.3	5.9	26.8	N/A	N/A	N/A
50751-347	0001	0008	18.6	5.7	25.7	N/A	N/A	N/A
50751-347	0001	0009	18.2	5.5	26.5	N/A	N/A	N/A
50751-347	0001	0010	18.6	5.8	26.0	N/A	N/A	N/A
50751-347	0001	0011	18.5	5.7	28.6	N/A	N/A	N/A

### Chemical Composition (wt%), Aluminum Remainder

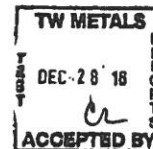
LIMITS	Si	Fe	Cu	Mn	Mg	Cr	Zn	Ti	Pb	Bi	Zr	Ea	Tot
Maximum	0.80	0.70	0.40	0.15	1.20	0.35	0.25	0.15	NA	NA	NA	0.05	.15
Minimum	0.40	0.00	0.15	0.00	0.80	0.04	0.00	0.00	NA	NA	NA	0.00	.0
F76091	.58	.30	.22	.06	1.03	.09	.03	.03	.00	.00	.00	.01	.02
F76216	.60	.30	.21	.05	1.01	.09	.07	.03	.00	.00	.00	.01	.02

### Applicable Requirements:

ASTM-B241-16 NON-STENCILED ASTM-B221-14 ASTM-B345-11 AMS-QQ-A-200/9A TYPE I  
UNS#A96061 Also conforms to EN 10204 3.1

### Miscellaneous Notes

MANUFACTURED IN USA MELTED IN USA  
MERCURY IS NOT A NORMAL BACKGROUND ELEMENT IN ALUMINUM ALLOYS. NEITHER MERCURY NOR ANY  
OF ITS COMPOUNDS ARE UTILITIZED BY KAISER ALUMINUM IN THE MANUFACTURE OF THIS MATERIAL.



Plant Serial: 00015006  
Kaiser Order Number: 320897  
Line Item: 001

C



**KAISER**  
**ALUMINUM**  
**FABRICATED PRODUCTS**

KAISER ALUMINUM  
FABRICATED PRODUCTS, LLC  
2425 STEVENS DRIVE  
RICHLAND, WA 99352

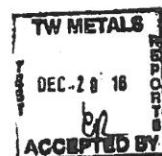
**CERTIFIED TEST REPORT**

<http://Online.KaiserAluminum.com>

**CERTIFICATION**

Kaiser Aluminum Fabricated Products, LLC hereby certifies that metal shipped under this order has been inspected and tested and found in conformance with applicable specifications forming a part of the description set forth in Kaiser's sales acknowledgement form. Any warranty is limited to that shown on Kaiser's general terms and conditions of sale. Test reports are on file, subject to examination.

JOSEPH AMES, QUALITY MANAGER



Plant Serial: 00015006  
Kaiser Order Number: 320897  
Line Item: 001

C

# KAISER ALUMINUM FABRICATED PRODUCTS

*Best in Class*

## CERTIFIED TEST REPORT

<http://Online.KaiserAluminum.com>

KAISER ALUMINUM  
FABRICATED PRODUCTS, LLC  
6573 W. WILLIS ROAD  
CHANDLER, AZ 85226

CUSTOMER PO NUMBER: M49360917-1		CUSTOMER PART NUMBER: 42588		PRODUCT DESCRIPTION: Drawn Seamless Tube/Pipe	
KAISER ORDER NUMBER: 221973	LINE ITEM: 001	SHIP DATE: 12/05/2016	KAISER LOT NUMBER: F00229976	ALLOY: 6061	TEMPER: T6
WEIGHT SHIPPED: 239.000 LB	QUANTITY: 86.000 PCS	B/L NUMBER: 223667	DIAM/DAF/THKNS:	WIDTH:	LENGTH: 12.000 FT
SHIP TO: TW METALS INC 27 ENGLEHARD DRIVE EXIT 8A OFF NJ TPK MONROE TWP, NJ 08831 USA			SOLD TO: TW METALS INC 760 CONSTITUTION DRIVE SUITE 204 EXTON, PA 19341 USA		

### Actual Physical Properties

REFERENCE	DASH#	SAMPLE#	UTS (KSI)	YTS (KSI)	ELONG%	HARDNESS	CON%IACS	BEND
F00229976	0001	1	46.9	40.5	17.5	N/A	N/A	N/A

### Chemical Composition (wt%), Aluminum Remainder

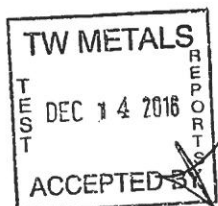
LIMITS	Si	Fe	Cu	Mn	Mg	Cr	Zn	Ti	Pb	Bi	Zr	Ea	Tot
Maximum	0.80	0.70	0.40	0.15	1.20	0.35	0.25	0.15	NA	NA	NA	0.05	0.15
Minimum	0.40	0.00	0.15	0.00	0.80	0.04	0.00	0.00	NA	NA	NA	0.00	0.00
D76008	.59	.26	.22	.04	1.00	.10	.05	.02	.00	.00	.00	.01	.02

### Applicable Requirements:

Description: OD: 0.6250"; Wall: 0.1250"; Round @  
AMS4082P AMS-WW-T-700/6C ASTM B210-12 WW-T-700/6F  
WE TAKE EXCEPTION TO PARA. 5-2.1., Per AMS-4082P, WAS NOT OILED.  
This Product Complies to FAR BAA, DFARS BAA, FAR TAA  
COMPLIES TO DIN EN 10204 JAN 2005  
No Weld Repair. Mercury Free.

### Miscellaneous Notes

MANUFACTURED IN USA MELTED IN USA  
MATERIAL COMPLIES WITH FAR BAA (FAR 52.225-1, BUY AMERICAN ACT- SUPPLIES), DFARS BAA  
(DFARS 252.225-7001 BUY AMERICAN ACT & BAL OF PAYMENTS PROG), AND FAR TAA (FAR 52.225-5  
TRADE AGREEMENTS).





**KAISER**  
**ALUMINUM**  
**FABRICATED PRODUCTS**

*Best in Class*

**CERTIFIED TEST REPORT**

<http://Online.KaiserAluminum.com>

KAISER ALUMINUM  
FABRICATED PRODUCTS, LLC  
6573 W. WILLIS ROAD  
CHANDLER, AZ 85226

**CERTIFICATION**

Kaiser Aluminum Fabricated Products, LLC ('Kaiser') hereby certifies that metal shipped under this order has been inspected and tested and found in conformance with the applicable specifications forming a part of the description set forth in Kaiser's sales acknowledgement form. Any warranty is limited to that shown on Kaiser's general terms & conditions of sale. Test reports are on file subject to examination.

Hans Kattentidt, Quality Manager

*[Signature]*

Plant Serial: 00023570  
Kaiser Order Number: 221973  
Line Item: 001

## MILL TEST REPORT

Purchaser.: TW METALS-Cranbury				Certificate No.: 2016-12-78					
Contract No.: TWMP.O.No.: M49354071				Date of Issue.: 2016.12.17					
Commodity: Stainless Steel Seamless Tubes				Specifications: ASTM A213-15c/ASME SA213-15/ASTM A269-15a EAW					
Process: Cold Drawn				Delivery Condition: OD Polished to 240 Grit					
Steel Grade	Heat Number	Lot Number	Dimensions	Quantity					
				Pieces	Feet				
TP304/TP304L	YX1509-583	10-46	3/8"x0.035"x20'	500	10,000				
Chemical Composition by Weight (%)									
Element	C	Mn	P	S	Si	Cr	Ni	Mo	Co
Requirements	≤0.035	≤2.00	≤0.045	≤0.030	≤1.00	18.00-20.00	8.00-12.00	-	-
Ladle Analysis	0.025	0.61	0.030	0.002	0.34	18.31	8.05	-	-
Product Analysis	0.021	0.57	0.032	0.002	0.33	18.78	8.52	-	-
Mechanical Properties									
Test Item	Elongation (% in 2")		Tensile Strength (PSI) Rm		Yield Strength (PSI) Rp / 0.2%				
Requirements	≥35		≥75,000		≥30,000				
Test Results	77/79		99,000/100,000		45,000/46,000				
Test Item	Reduction of Area Z (%)	Hardness	Cold Bend Test	Flaring Test	Flattening Test	Flange Test	P.M.I. Test		
Requirements	-	HRB≤80	-	22%	e=0.09	-	-		
Test Results	-	77/79	-	Passed	Passed	-	OK		
Test Item	Eddy Current Test	Air Underwater Pressure Test	Ultrasonic Test	Intergranular Corrosion Test	Macroscopic Inspection				
Requirements	ASTM E 426	-	-	ASTM A262 E	End Cut	Appearance			
Test Results	Passed	-	-	OK	OK	OK			

ISO 9001:2008 Certified by CAS 117 16 QU 0053-06 ROS

PED Certified by SZUTEST 2195-PED-1526002

## Additional Remarks:

- (1) All tubes annealed to above 1900 Deg F and water quenched below 800 Deg F in 3 minutes
- (2) All tubes tested per ASTM A1016-14
- (3) Materials is NACE MR0103-2007 compliant (per Section 2.5)
- (4) Materials is NACE MR0175/ISO 15156-2003 compliant (per Section 4.2.1)
- (5) In Compliance with EN 10204-3.1
- (6) In Compliance with RoHS Stipulation
- (7) No weld repair performed
- (8) Free from mercury contamination
- (9) Free from radioactive contamination
- (10) Billets melt and pipes/tubes manufactured in China
- (11) All tubes 100% PMI tested
- (12) All tubes 100% Eddy Current tested

**CANNOT CERTIFY COMPLIANCE  
FAR BAA / DFARS BAA / FAR TAA**



By:



James Shi

James Shi / Manager

Quality Control Department

We hereby certify that this report is true and correct.

Jiangsu Pufa Stainless Steel Tube Co., Ltd.

No. 99, Xuean Middle Road, Dongchen Town, Rugao City, Jiangsu Province, P.R.China

PUFA™

Producer of Premium Stainless Steel Seamless Tubes

## MILL TEST REPORT

Purchaser.: TW METALS-Cranbury				Certificate No.: 15-5-23					
Contract No.: TWM P.O.No.: M49329273				Date of Issue.: 2015.5.7					
Commodity: Stainless Steel Seamless Tubes			Specifications: ASTM A213-14/ASME SA213-13/ASTM A269-14 EAW						
Process: Cold Drawn			Delivery Condition: OD Polished to 240 Grit						
Steel Grade	Heat Number	Lot Number	Dimensions	Quantity					
				Pieces	Feet				
TP304/TP304L	YX1410-664	4-34	3/8" x 0.065" x 20'	250	5,000				
Chemical Composition by Weight (%)									
Element	C	Mn	P	S	Si	Cr	Ni	Mo	Co
Requirements	≤0.035	≤2.00	≤0.045	≤0.030	≤1.00	18.00-20.00	8.00-12.00	-	-
Ladle Analysis	0.010	0.63	0.028	0.001	0.46	18.33	8.05	-	-
Product Analysis	0.019	0.79	0.033	0.001	0.51	18.52	8.50	-	-
Mechanical Properties									
Test Item	Elongation (% in 2")	Tensile Strength (PSI)		Yield Strength (PSI)					
		Rm		Rp / 0.2%					
Requirements	≥35	≥75,000		≥30,000					
Test Results	63/64	92,000/93,000		36,000/37,000					
Test Item	Reduction of Area Z (%)	Hardness	Cold Bend Test	Flaring Test	Flattening Test	Flange Test	P.M.I. Test		
Requirements	-	HRB≤80	-	30%	e=0.09	-	-		
Test Results	-	77/79	-	Passed	Passed	-	OK		
Test Item	Eddy Current Test	Air Underwater Pressure Test	Ultrasonic Test	Intergranular Corrosion Test	Macroscopic Inspection				
Requirements	ASTM E 426	-	-	ASTM A262 E	End Cut	Appearance			
Test Results	Passed	-	-	OK	OK	OK			

ISO 9001:2008 Certified by Intertek 110703068

PED Certified by SZUTEST 2195-PED-1221604

## Additional Remarks:

- (1) All tubes annealed to above 1900 Deg F and water quenched below 800 Deg F in 3 minutes
- (2) All tubes tested per ASTM A1016-14
- (3) Materials is NACE MR0103-2007 compliant (per Section 2.5)
- (4) Materials is NACE MR0175/ISO 15156-2003 compliant (per Section 4.2.1)
- (5) In Compliance with EN 10204-3.1
- (6) In Compliance with RoHS Stipulation
- (7) No weld repair performed
- (8) Free from mercury contamination
- (9) Free from radioactive contamination
- (10) Billets melt and pipes/tubes manufactured in China
- (11) All tubes 100% PMI tested
- (12) All tubes 100% Eddy Current tested

CANNOT CERTIFY COMPLIANCE  
FAR BAA / DFARS BAA / FAR TAA



By:

James Shi

James Shi / Manager

Quality Control Department

We hereby certify that this report is true and correct.

Shanghai Pufa Stainless Steel Pipe Factory  
No. 59, Shuangye Road, Wanggang, New Pudong District, Shanghai, China

T E S T	TW METALS		R E P O R T S
	JUN 17 2015		
	ACCEPTABLE BY		

Benteler Steel/Tube GmbH  
Postfach 13 40  
33043 Paderborn  
Deutschland  
Tel.: +49.5254.81-0 Fax: +49.5254.13666

**BENTELER**

Steel/Tube

**ABNAHMEPRÜFZEUGNIS EN 10204-3.1**

INSPECTION CERTIFICATE EN 10204-3.1

CERTIFICAT DE RECEPTION EN 10204-3.1

EN 10204:2005-01

Benteler Steel/Tube GmbH - Postfach 1340 - 33043 Paderborn - Deutschland

TW Metals

The Aboretum, Suite 204

760 Constitution Drive

EXTON PA 19341

USA

Dokument-Nr.: 41-970599/001/P

Document No.: No. du document:

Kunden-Bestell-Nr.: 46004514 TW M49355846

Purchase Order No.: No. de commande du client:

Benteler Auftrags-Nr.: 1627804

Benteler Order No.: No. de commande Benteler:

Versandanzeigen-Nr.: 4176284

Dispatch Note No.: No. d'avis d'expédition:

Produkt: NAHTLOSE STAHLROHRE

Product: SEAMLESS STEEL TUBES

Produit: TUBES D'ACIER SANS SOUDURE

Prüf-Nr.: No. du certificat:

Hersteller: Warmrohrwerk/Zieherei

Manufacturer: IDIN EN ISO 9001, ISO/TS-16949 CERTIFIED BY TUV NORD CERT

Producteur: (PED 2014/68/EU CERTIFIED BY TUV NORD SYSTEMS)

Herstellerzeichen: Stempel des Abnahmebeauftragten: WA

Manufacturer's brand: Stamp of the inspection representative:

Marque du producteur: Poinçon du contrôleur:

Stahlschmelzungsverfahren: ELEKTROSTAHL

Steelmaking process: ELECTRIC FURNACE

Procédé d'élaboration de l'acier: FOUR ELECTRIQUE

Blatt: 1 / 4

Page:

Lieferbedingungen:

Terms of delivery:

Conditions de livraison:

Maße - Toleranzen:

Dimensions-tolerances:

Dimensions-tolérances:

straightness acc. to customer request, AMS 2253E-83, Aircraft Type, Seamless, Cold Finished

Stahlsorte:

Steel grade:

Nuance d'acier:

Lieferzustand:

Delivery condition:

État de livraison:

GRADE 4130

Condition N

Produktkennzeichnung:

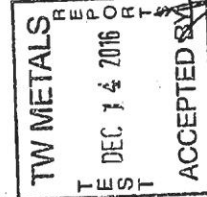
CD AQ S DIMENSIONS WA GERMANY

FSD: BENTELER AMS6360M-AMS-T-6736 B 1-MIL-T-6736 B 1-AMS 2301K 4130 Condition N HEAT-NO.

Product marking:

Marquage du produit:

AEZ = Ätzlinienbeschriftung, Etching ink marking, Gravure à l'encre . FK = Farbkennzeichnung, color marking, marquage par couleur . FS = Farbschablonierung, paint stencilling, marquage par peinture . FSD = Farbstahlprüfdruck, Color jet printer, imprimante à jet d'encre de couleur . LX = Laserkennzeichnung, Laser marking, Marquage laser . PKE = Etikettenkennzeichnung, tag marking, marquage sur étiquette . PS = Prägestempel, die stamp, marquage par poinçonnage . TS = Tintenstrahlkennzeichnung, ink jet spray marking, imprimante à jet d'encre .



Benteler Steel/Tube GmbH  
Postfach 13 40  
33043 Paderborn  
Deutschland  
Tel.: +49.5254.81-0 Fax: +49.5254.13666



Steel/Tube

ABNAHMEPRÜFZEUGNIS EN 10204-3.1

INSPECTION CERTIFICATE EN 10204-3.1  
CERTIFICAT DE RECEPTION EN 10204-3.1

Dokument-Nr.: 41-970599/001/P  
Document No.:  
No. du document:

Prüf-Nr.:  
Inspection No.:  
No. du certificat:

Blatt: 2 / 4  
Page:  
Page:

Pos.	Stück	Maße	Item	Number	Dimensions	Poste	Nombre	Dimensions	Gesamtlänge	Gewicht	Schmelzen-Nr.	Prüfdruck	Rohr-Nr.-Gruppe	Vielfachlängen
									Longueur totale	Poids	Heat No.	Test pressure	Tube number group	Multiple lengths
									Longueur totale	Poids	No. de coulée	Pression d'épreuve	Série de no. des tubes	Longueurs multiples
									feet	lbs				
0003	79	0.500" O.D. * 0.049" WT							1588,81	388	251772			
		20 FT - 24 FT												

Schmelzenanalyse [%] / Heat analysis [%] / Analyse sur coulée [%]

Pos.	Schmelzen-Nr.	C	SI	MN	P	S	CR	MO	NI	CU
Item	Heat No.									
Poste	No. de coulée									
0003	251772	0,320	0,230	0,52	0,008	0,002	0,89	0,19	0,11	0,13

Produktanalyse [%] / Product analysis [%] / Analyse sur produit [%]

Pos.	Schmelzen-Nr.	C	SI	MN	P	S	CR	MO	NI	CU
Item	Heat No.									
Poste	No. de coulée									
0003	251772	0,320	0,230	0,52	0,010	0,002	0,92	0,20	0,11	0,14

Prüfergebnisse / Test results / Résultats des essais

Die Rohre wurden zerstörungsfrei geprüft:

The tubes are non destructive tested:

Les tubes ont passé un essai non destructif:

ET-test: acc. to ASTM-A 450; ET - Test method: acc. to ASTM-E 309; for imperfections;

ET-test: ET with rotating pancake coils; according to EN 10246-3; imperfections;

Notch depth: 0,30 mm; notch width < = notch depth; notch length min. 2 x transducer width (max. 50 mm)

PASSED

Augensichtkontrolle:	PASSED	Materialverwechslungsprüfung:	PASSED	Maßkontrolle:	PASSED
Visual inspection:		Material conformity test:		Dimensions examination:	
Examen visuel:		Vérification de la nuance:		Vérification des dimensions:	

Ergebnisse der mechanischen Prüfung / Results of mechanical testing / Résultats des essais mécaniques

Die Probenahme erfolgte an Vielfachlängen.

The sampling was carried out on multiple lengths.

L'échantillonnage était réalisé aux longueurs multiples.

Benteler Steel/Tube GmbH  
Postfach 13 40  
33043 Paderborn  
Deutschland  
Tel.: +49.5254.81-0 Fax: +49.5254.13666



Steel/Tube

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41-970599/001/P

Dokument-Nr.:  
Document No.:  
No. du document:

ABNAHMEPRÜFZEUGNIS EN 10204-3.1

INSPECTION CERTIFICATE EN 10204-3.1

CERTIFICAT DE RECEPTION EN 10204-3.1

Zugversuch längs bei RT, Vollprobe / Tensile test longitudinal at RT, Full section test specimen / Essai de traction longitudinale à TA, Eprouvette a section complete

Pos.	Proben-Nr. Specimen No.	Schmelzen-Nr. Heat No.	Probenabmessung Specimen dimensions	Streckgrenze Yield strength	Zugfestigkeit Tensile strength	Dehnung Elongation
Poste	No. de l'éprouv.	No. de coulée	Dimensions de l'éprouv.	Limite élastique	Résistance à la traction	Allongement
Anforderungen Requirements Exigences			mm	Rp 0,2 % KSI MIN 75	Rm KSI MIN 95	A2" % MIN 12.00
0003	000001	251772	12,72 X 1,24	99	128	18,00
0003	000002	251772	12,72 X 1,24	101	129	18,00

Randentkohlung / Surface decarburization / Décarburation superficielle

Pos. / Item / Poste: 0003

acc. to AMS-6360, partial decarburization outside max. 0.009 in, partial decarburization inside max. 0.009 in, partial decarburization outside and inside max. 0.012 in, partial decarburization outside and inside max. 0.305 mm, without total decarburization; partial decarb. out. max.: 0,229 mm; partial decarb. ins. max.: 0,229 mm

Vermerk / Remark / Remarque

Pos. / Item / Poste: 0003

Certificate remarks: The steel grade corresponds to MIL-T-6736B, AMS 6360M, material free from mercury contamination, FAR BAA: 52.225-1 CANNOT COMPLY, DFARS BAA: 252.225-7001 CAN COMPLY, FAR TAA: 52.225-5 CAN COMPLY, No weld repair has been carried out, Country of origin of the material and heat: Germany, Aircraft quality steel acc. to AMS 2301K / Semi finished product examination: see appendix, page 1 of 1

Pos. / Item / Poste: 0003

Macroscopic examination: acc. to ASTM-E 381

Pos. / Item / Poste: 0003

Magnetic particle inspec.: acc. to AMS 2301K/ASTM-E 1444, on prematerial

Pos. / Item / Poste: 0003

Grain size: acc. to ASTM-E 112; Grain size and finer: 5; Grain size: Longitudinal structure micrography, On prematerial

Verkäufer(in) / Sales Personnel / Personne chargée : Mr Schwarz, Tel.: 05254 81-204311, Fax: 204391

Benteler Steel/Tube GmbH  
Postfach 13 40  
33043 Paderborn  
Deutschland  
Tel.: +49.5254.81-0 Fax: +49.5254.13666

**BENTELER**   
Steel/Tube

**ABNAHMEPRÜFZEUGNIS EN 10204-3.1**

INSPECTION CERTIFICATE EN 10204-3.1  
CERTIFICAT DE RECEPTION EN 10204-3.1

41-970599/001/P

Dokument-Nr.:  
Document No.:  
No. du document:

Prüf-Nr.:  
Inspection No.:  
No. du certificat:

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Page:  
Page:

Paderborn Schloß Neuhaus, 07.11.2016, TEL.: 05254.81-201766 FAX: 05254.81-201752

Abnahmebeauftragter  
Inspection representative  
Contrôleur

i.A. THOMAS GOLLAN / ICK

Es wird bestätigt, daß die gelieferten Erzeugnisse den techn. Lieferbedingungen des Auftrages entsprechen. Dieses Dokument wurde mittels EDV erstellt und ist ohne Unterschrift rechtsgültig.  
We certify that the supplied products comply with the order specification. This document was prepared by means of electronic data processing and is valid without signature.  
Nous attestons que les produits livrés sont conformes aux stipulations de la commande. Ce document a été établi par traitement électronique de l'information et est valide sans signature.

Benteler Steel/Tube GmbH  
Residenzstraße 1  
33104 Paderborn  
Germany  
Tel.: 49.5254.81-0 Fax: 49.5254.13666



Abnahmeprüfzeugnis EN 10204-3.1 / Anhang  
**Inspection Certificate EN 10204.3.1 / appendix**  
Certificat de réception EN 10204-3.1 / appendice

Dokument-Nr.  
**Document No.:**  
No. de document:

Blatt: von  
**Page:** 1 of 1  
Page: de

Halbzeuguntersuchung: Stahlsorte 4130 / Semi-finished product examination: grade 4130 / Produit semi-fini: nuance 4130

Schmelzen-Nr. Heat No. Coulée No.	Position Item Poste	Korngröße Grain size Grosseur de grain (ASTM-E 112)	Härtebarkeit (min. Anforderungen) Hardenability (min. requirements) Trempeabilité (exigence min.) (ASTM-A 255)		Magnetpulverprüfung Magnetic particle inspection Essai à la poudre magnétique (AMS 2301K / ASTM-E 1444)		Makroätzung Macrostructure test Essai de macrostructure (ASTM-E 381)		
			J(5/16") min. 35 HRC	J(8/16") min. 28 HRC	F max. 0,34	S max. 0,25	max. S 2	max. R 1	max. C 2
251772	003	9	41	31	0,020	0,020	S 2	R 1	C 2
Decarburization Depth		Outside 0,000 mm Inside 0,000 mm							

Der Stahl ist frei von Quecksilberverunreinigungen. / The steel is free of mercury contamination. / L'acier est libre des contaminations de mercure.

Paderborn Schloß Neuhaus, 07.11.2016  
Tel.: (0)5254.81-201760 Fax: (0)5254.81-201752

Abnahmebeauftragter  
**Inspection representative**  
Contrôleur

Thomas Gollan





**PLYMOUTH TUBE CO. USA**  
 212 Industrial Park Road, Eupora, Mississippi 39744  
 Phone: (662) 258-2420 Fax: (662) 258-2075

# PRODUCT CERTIFICATION

SALES ORDER - LINE / RLS

143275 - 1 / 3

WORK ORDER A43275  
 HEAT NUMBER MM16101444

MELT SOURCE Nucor Steel - USA Melt/Mfg

## SHIP TO

TW Metals  
 27 Englehard Drive  
 Monroe Township, NJ 08831  
 USA



CUSTOMER P.O. M 49354259	CUSTOMER PART 33364	QUANTITY 2,697.0	LADING NO ft 00087888	CERT ID / REV 01	CERT DATE 08/15/2016
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<b>PART DESCRIPTION</b> H10001200J002 OD: 1.0000" Max: 1.0050" Min: 0.9950" Wall: 0.1200" Max: 0.1320" Min: 0.1080" Length: 20.00' / 24.00' Lgth Tol: RANDOM CUT LENGTH Lgth: 20.00' / 24.00' Spec: Mil-T 6736B Seamless Aircraft Grade: 4130 Finish: Cond N	<b>TW METALS</b> TEST AUG 22 2016 ACCEPTED BY
---	--

**CERTIFICATION REQUIREMENTS**  
 This material was Eddy Current tested and conforms to the requirements of ASTM A-450.  
 The Grain size is determined and reported by the raw material supplier in accordance to ASTM E-112.  
 This raw material was magnetic particle inspected by the raw material supplier in accordance to AMS 2640J and/or ASTM E-1444, and rated as Frequency, and Severity to AMS 2301, latest revision.  
 Yield is determined by using the 0.2% offset method.

**Chemical Analysis**

C	Mn	P	S	Si	Cu	Ni	Cr	Mo	V	Ti	Al	Sn
.31	.53	.008	.005	.23	.17	.13	1.04	.218	.0024	.002	.023	.007

**Physical Properties**

Freq.	Severity	Grain Size
.000	.000	6

**Mechanical Properties**

TEST	UNITS	#TESTS	HIGH	LOW	AVERAGE	STD-DEV
Tensile	Psi	3	107900	105700	107133	1242
Yield	Psi	3	100500	92100	97267	4521
Elongation	%	3	21	20	21	1

TEST	UNITS	#TESTS	HIGH	LOW	AVERAGE	STD-DEV
Decarb/OD						
Total ID/OD decarb						

TEST	UNITS	#TESTS	HIGH	LOW	AVERAGE	STD-DEV
Rockwell C	Rc	3	22	21	21	1
Rockwell B	Rb					

I certify that the results are a true and correct copy of the records prepared and maintained by Plymouth Tube Company, Eupora in compliance with the requirements of the cited specification. Chemistry is as reported by the Steel supplier. This test report cannot be reproduced or distributed except in full without the written permission of Plymouth Tube. Product free from hazardous materials.

*Ken G. Young*  
 Quality Assurance



**PLYMOUTH TUBE CO. USA®**  
212 Industrial Park Road, Eupora, Mississippi 39744  
Phone: (662) 258-2420 Fax: (662) 258-2075

## PRODUCT CERTIFICATION

SALES ORDER - LINE / RLS

143275 - 1 / 3

### SHIP TO

TW Metals  
27 Englehard Drive  
Monroe Township, NJ 08831  
USA

WORK ORDER A43275  
HEAT NUMBER MM16101444  
MELT SOURCE Nucor Steel - USA Melt/Mfg



CUSTOMER P.O.	CUSTOMER PART	QUANTITY	LADING NO	CERT ID / REV	CERT DATE
M 49354259	33364	2,697.0 ft	00087888	01	08/15/2016
PART DESCRIPTION		H10001200J002			
Additional Specification(s)					
AMS-T6736 B, AMS 6360M					
This test report data is for the heat Chemistry Stated above. Drawn in the USA					
End of Certification					

I certify that the results are a true and correct copy of the records prepared and maintained by Plymouth Tube Company, Eupora in compliance with the requirements of the cited specification. Chemistry is as reported by the Steel supplier. This test report cannot be reproduced or distributed except in full without the written permission of Plymouth Tube. Product free from hazardous materials.

*Don E. Young*  
Quality Assurance

# MATERIAL RECEIPT INSPECTION FORM

MATERIAL: M4130N TO .500W, 048

PO / BATCH NO: PO 35245 / M136846

DATE: 17-2-22

MATERIAL CERT REC'D: Yes  
 QUANTITY RECEIVED: 20'P  
 QUANTITY INSPECTED: 20'P  
 QUANTITY REJECTED: 0

THICKNESS ORDERED: .500X.048  
 THICKNESS RECEIVED: .500X.048  
 SHEET SIZE ORDERED: 0  
 SHEET SIZE RECEIVED: 0

DESCRIPTION	NCR (Check Y/N)		COMMENTS
SURFACE DAMAGE	Y	<input checked="" type="checkbox"/> N	
CORRECT FINISH	<input checked="" type="checkbox"/> Y	N	
CORROSION	Y	<input checked="" type="checkbox"/> N	
CORRECT GRAIN DIRECTION	<input checked="" type="checkbox"/> Y	N	
CORRECT MATERIAL	<input checked="" type="checkbox"/> Y	N	
CORRECT THICKNESS	<input checked="" type="checkbox"/> Y	N	
PHOTO REQUIRED	Y	<input checked="" type="checkbox"/> N	
CORRECT MATERIAL	<input checked="" type="checkbox"/> Y	N	
CORRECT REF # TO LINK CERT	<input checked="" type="checkbox"/> Y	N	
CORRECT MATERIAL IDENTIFICATION	<input checked="" type="checkbox"/> Y	N	<u>251772</u>
CORRECT M# ON THE MATERIAL	<input checked="" type="checkbox"/> Y	N	
DOES THIS MATERIAL REQUIRE ENGINEERING SIGN OFF	Y	N	
DOES THIS REQUIRE AN EXTRUSION REPORT	Y	N	

CUT SAMPLE PIECE OF MATERIAL AND PREFORM A HARDNESS CHECK. RECORD RESULTS BELOW				
TYPE OF MATERIAL	HRC	HRB	DUR A	DUR D
SIZE OF TEST SAMPLE				
HARDNESS / DUROMETER READING				

testers located in the Quality Office

QC 18 INSPECTION	ENGINEERING SIGNOFF (if required)
INSPECTED BY: <u>38</u> <u>9-28</u> DATE: <u>FEB 22 2017</u>	SIGNED OFF BY: _____ DATE: _____

Attach this inspection sheet with the corresponding material cert and remit to be scanned and received in

# MATERIAL RECEIPT INSPECTION FORM

MATERIAL: M304FR0.375W.065

PO / BATCH NO.: P035245/M136846

DATE: 17-2-22

MATERIAL CERT REC'D: Yes  
 QUANTITY RECEIVED: 20'f  
 QUANTITY INSPECTED: 20'f  
 QUANTITY REJECTED: 0

THICKNESS ORDERED: .375x.065  
 THICKNESS RECEIVED: .375x.065  
 SHEET SIZE ORDERED: 0  
 SHEET SIZE RECEIVED: 0

DESCRIPTION	NCR (Check Y/N)		COMMENTS
SURFACE DAMAGE	Y	N	
CORRECT FINISH	Y	N	
CORROSION	Y	N	
CORRECT GRAIN DIRECTION	Y	N	
CORRECT MATERIAL	Y	N	
CORRECT THICKNESS	Y	N	
PHOTO REQUIRED	Y	N	
CORRECT MATERIAL	Y	N	
CORRECT REF # TO LINK CERT	Y	N	
CORRECT MATERIAL IDENTIFICATION	Y	N	<u>YX1410669</u>
CORRECT M# ON THE MATERIAL	Y	N	
DOES THIS MATERIAL REQUIRE ENGINEERING SIGN OFF	Y	N	
DOES THIS REQUIRE AN EXTRUSION REPORT	Y	N	

CUT SAMPLE PIECE OF MATERIAL AND PREFORM A HARDNESS CHECK. RECORD RESULTS BELOW				
TYPE OF MATERIAL	HRC	HRB	DUR A	DUR D
SIZE OF TEST SAMPLE				
HARDNESS / DUROMETER READING				

testers located in the Quality Office

QC 18 INSPECTION	ENGINEERING SIGNOFF (if required)
INSPECTED BY: <u>DAS 38</u> DATE: <u>FEB 22 2017</u>	SIGNED OFF BY: _____ DATE: _____

Attach this inspection sheet with the corresponding material cert and remit to be scanned and received in

# MATERIAL RECEIPT INSPECTION FORM

MATERIAL: M 304TR0.375W.0.35

PO / BATCH NO. PO 35 245 / M 136846

DATE: 17-2-22

MATERIAL CERT REC'D: Yes  
 QUANTITY RECEIVED: 20' P  
 QUANTITY INSPECTED: 20' P  
 QUANTITY REJECTED: 0

THICKNESS ORDERED: .375 X .035  
 THICKNESS RECEIVED: .375 X .035  
 SHEET SIZE ORDERED: 0  
 SHEET SIZE RECEIVED: 0

DESCRIPTION	NCR (Check Y/N)		COMMENTS
SURFACE DAMAGE	Y	<input checked="" type="checkbox"/> N	
CORRECT FINISH	<input checked="" type="checkbox"/> Y	N	
CORROSION	Y	<input checked="" type="checkbox"/> N	
CORRECT GRAIN DIRECTION	<input checked="" type="checkbox"/> Y	N	
CORRECT MATERIAL	<input checked="" type="checkbox"/> Y	N	
CORRECT THICKNESS	<input checked="" type="checkbox"/> Y	N	
PHOTO REQUIRED	Y	<input checked="" type="checkbox"/> N	
CORRECT MATERIAL	<input checked="" type="checkbox"/> Y	N	
CORRECT REF # TO LINK CERT	<input checked="" type="checkbox"/> Y	N	
CORRECT MATERIAL IDENTIFICATION	<input checked="" type="checkbox"/> Y	N	<u>YX 1509583</u>
CORRECT M# ON THE MATERIAL	<input checked="" type="checkbox"/> Y	N	
DOES THIS MATERIAL REQUIRE ENGINEERING SIGN OFF	Y	N	
DOES THIS REQUIRE AN EXTRUSION REPORT	Y	N	

CUT SAMPLE PIECE OF MATERIAL AND PREFORM A HARDNESS CHECK. RECORD RESULTS BELOW					
TYPE OF MATERIAL SIZE OF TEST SAMPLE HARDNESS / DUROMETER READING	HRC	HRB	DUR A	DUR D	

testers located in the Quality Office

QC 18 INSPECTION	ENGINEERING SIGNOFF (if required)
INSPECTED BY: <u>38</u> <u>9-89</u>	SIGNED OFF BY: _____
DATE: <u>FEB 22 2017</u>	DATE: _____

Attach this inspection sheet with the corresponding material cert and remit to be scanned and received in

# MATERIAL RECEIPT INSPECTION FORM

MATERIAL M6061-T6 TO .625W.125

PO / BATCH NO: P035245/M136846

DATE: 17-2-22

MATERIAL CERT REC'D: Yes

QUANTITY RECEIVED: 24.4

QUANTITY INSPECTED: 24.4

QUANTITY REJECTED: 0

THICKNESS ORDERED: 0.625X.125

THICKNESS RECEIVED: 0.625X.125

SHEET SIZE ORDERED: 6

SHEET SIZE RECEIVED: 0

DESCRIPTION	NCR (Check Y/N)		COMMENTS
SURFACE DAMAGE	Y	<input checked="" type="checkbox"/> N	
CORRECT FINISH	<input checked="" type="checkbox"/> Y	N	
CORROSION	Y	<input checked="" type="checkbox"/> N	
CORRECT GRAIN DIRECTION	<input checked="" type="checkbox"/> Y	N	
CORRECT MATERIAL	<input checked="" type="checkbox"/> Y	N	
CORRECT THICKNESS	<input checked="" type="checkbox"/> Y	N	
PHOTO REQUIRED	Y	<input checked="" type="checkbox"/> N	
CORRECT MATERIAL	<input checked="" type="checkbox"/> Y	N	
CORRECT REF # TO LINK CERT	<input checked="" type="checkbox"/> Y	N	
CORRECT MATERIAL IDENTIFICATION	<input checked="" type="checkbox"/> Y	N	<u>F002299760001</u>
CORRECT M# ON THE MATERIAL	<input checked="" type="checkbox"/> Y	N	
DOES THIS MATERIAL REQUIRE ENGINEERING SIGN OFF	Y	N	
DOES THIS REQUIRE AN EXTRUSION REPORT	Y	N	

CUT SAMPLE PIECE OF MATERIAL AND PREFORM A HARDNESS CHECK. RECORD RESULTS BELOW					
TYPE OF MATERIAL SIZE OF TEST SAMPLE HARDNESS / DUROMETER READING	HRC	HRB	DUR A	DUR D	

testers located in the Quality Office

QC 18 INSPECTION		ENGINEERING SIGNOFF (if required)	
INSPECTED BY: <u>30</u> <u>9-89</u>	SIGNED OFF BY: _____		
DATE: <u>FEB 22 2017</u>	DATE: _____		

Attach this inspection sheet with the corresponding material cert and remit to be scanned and received in

# MATERIAL RECEIPT INSPECTION FORM

MATERIAL: M6061T6 TO .375W, .058

PO / BATCH NO: PO 35245 / M136846

DATE: 17-2-22

MATERIAL CERT REC'D: Yes

THICKNESS ORDERED: 1375 x 0.58

QUANTITY RECEIVED: 48'P

THICKNESS RECEIVED: ~~352~~ 1375 x 0.58

QUANTITY INSPECTED: 48'P

SHEET SIZE ORDERED: Ø

QUANTITY REJECTED: Ø

SHEET SIZE RECEIVED: Ø

DESCRIPTION	NCR (Check Y/N)		COMMENTS
SURFACE DAMAGE	Y	<input checked="" type="checkbox"/>	
CORRECT FINISH	<input checked="" type="checkbox"/>	N	
CORROSION	Y	<input checked="" type="checkbox"/>	
CORRECT GRAIN DIRECTION	<input checked="" type="checkbox"/>	N	
CORRECT MATERIAL	<input checked="" type="checkbox"/>	N	
CORRECT THICKNESS	<input checked="" type="checkbox"/>	N	
PHOTO REQUIRED	Y	<input checked="" type="checkbox"/>	
CORRECT MATERIAL	<input checked="" type="checkbox"/>	N	
CORRECT REF # TO LINK CERT	<input checked="" type="checkbox"/>	N	
CORRECT MATERIAL IDENTIFICATION	<input checked="" type="checkbox"/>	N	1180968
CORRECT M# ON THE MATERIAL	<input checked="" type="checkbox"/>	N	
DOES THIS MATERIAL REQUIRE ENGINEERING SIGN OFF	Y	N	
DOES THIS REQUIRE AN EXTRUSION REPORT	Y	N	

CUT SAMPLE PIECE OF MATERIAL AND PERFORM A HARDNESS CHECK.  
RECORD RESULTS BELOW

	HRC	HRB	DUR A	DUR D
TYPE OF MATERIAL				
SIZE OF TEST SAMPLE				
HARDNESS / DUROMETER READING				

testers located in the Quality Office

QC 18 INSPECTION		ENGINEERING SIGNOFF (if required)
INSPECTED BY: <u>38</u> <u>9-89</u> DATE: <u>FEB 22 2017</u>	SIGNED OFF BY: _____ DATE: _____	

Attach this inspection sheet with the corresponding material cert and remit to be scanned and received in





# MATERIAL RECEIPT INSPECTION FORM

MATERIAL: M 304TR0.500 W, 049

PO / BATCH NO: PO 35245 / M 136846

DATE: 17-2-22

MATERIAL CERT REC'D: Yes  
 QUANTITY RECEIVED: 20' 4  
 QUANTITY INSPECTED: 20' 4  
 QUANTITY REJECTED: 0

THICKNESS ORDERED: 1.500 X 1.049  
 THICKNESS RECEIVED: 1.500 X 1.049  
 SHEET SIZE ORDERED: 8  
 SHEET SIZE RECEIVED: 8

DESCRIPTION	NCR (Check Y/N)		COMMENTS
SURFACE DAMAGE	Y	<input checked="" type="checkbox"/>	
CORRECT FINISH	<input checked="" type="checkbox"/>	N	
CORROSION	Y	<input checked="" type="checkbox"/>	
CORRECT GRAIN DIRECTION	<input checked="" type="checkbox"/>	N	
CORRECT MATERIAL	<input checked="" type="checkbox"/>	N	
CORRECT THICKNESS	<input checked="" type="checkbox"/>	N	
PHOTO REQUIRED	Y	<input checked="" type="checkbox"/>	
CORRECT MATERIAL	<input checked="" type="checkbox"/>	N	
CORRECT REF # TO LINK CERT	<input checked="" type="checkbox"/>	N	
CORRECT MATERIAL IDENTIFICATION	<input checked="" type="checkbox"/>	N	<u>YX 1506712</u>
CORRECT M# ON THE MATERIAL	<input checked="" type="checkbox"/>	N	
DOES THIS MATERIAL REQUIRE ENGINEERING SIGN OFF	Y	N	
DOES THIS REQUIRE AN EXTRUSION REPORT	Y	N	

CUT SAMPLE PIECE OF MATERIAL AND PREFORM A HARDNESS CHECK. RECORD RESULTS BELOW					
TYPE OF MATERIAL SIZE OF TEST SAMPLE HARDNESS / DUROMETER READING	HRC	HRB	DUR A	DUR D	

testers located in the Quality Office

QC 18 INSPECTION	ENGINEERING SIGNOFF (if required)
INSPECTED BY: <u>38</u> DATE: <u>FEB 22 2017</u>	SIGNED OFF BY: _____ DATE: _____

Attach this inspection sheet with the corresponding material cert and remit to be scanned and received in

# MATERIAL RECEIPT INSPECTION FORM

MATERIAL: M 4130 NT 1.000 W, 120

PO / BATCH NO.: P035245/14136846

DATE: 17-2-22

MATERIAL CERT REC'D: Yes  
 QUANTITY RECEIVED: 20' f  
 QUANTITY INSPECTED: 20' f  
 QUANTITY REJECTED: 0

THICKNESS ORDERED: 1.000 x 1.120  
 THICKNESS RECEIVED: 1.000 x 1.120  
 SHEET SIZE ORDERED: 0  
 SHEET SIZE RECEIVED: 0

DESCRIPTION	NCR (Check Y/N)		COMMENTS
SURFACE DAMAGE	Y	<input checked="" type="checkbox"/> N	
CORRECT FINISH	<input checked="" type="checkbox"/> Y	N	
CORROSION	Y	<input checked="" type="checkbox"/> N	
CORRECT GRAIN DIRECTION	<input checked="" type="checkbox"/> Y	N	
CORRECT MATERIAL	<input checked="" type="checkbox"/> Y	N	
CORRECT THICKNESS	<input checked="" type="checkbox"/> Y	N	
PHOTO REQUIRED	Y	<input checked="" type="checkbox"/> N	
CORRECT MATERIAL	<input checked="" type="checkbox"/> Y	N	
CORRECT REF # TO LINK CERT	<input checked="" type="checkbox"/> Y	N	
CORRECT MATERIAL IDENTIFICATION	<input checked="" type="checkbox"/> Y	N	<u>MM 1610 1444</u>
CORRECT M# ON THE MATERIAL	<input checked="" type="checkbox"/> Y	N	
DOES THIS MATERIAL REQUIRE ENGINEERING SIGN OFF	Y	N	
DOES THIS REQUIRE AN EXTRUSION REPORT	Y	N	

CUT SAMPLE PIECE OF MATERIAL AND PREFORM A HARDNESS CHECK. RECORD RESULTS BELOW				
TYPE OF MATERIAL	HRC	HRB	DUR A	DUR D
SIZE OF TEST SAMPLE				
HARDNESS / DUROMETER READING				

testers located in the Quality Office

QC 18 INSPECTION	ENGINEERING SIGNOFF (if required)
INSPECTED BY: <u>DAS 38</u> DATE: <u>FEB 22 2017</u>	SIGNED OFF BY: _____ DATE: _____

Attach this inspection sheet with the corresponding material cert and remit to be scanned and received in



Dart Aerospace Ltd.  
1270 Aberdeen Street  
Hawkesbury, ON K6A 1K7  
Tel: 613 632 9577  
Fax: 613 632 1053

## PURCHASE ORDER

Purchase Order ID **PO35245**

Purchase Order Date 2/8/2017

PO Print Date 2/9/2017

Page Number 1 of 5

**Order From :**

VU-TWM001

**Ship To :** DART AEROSPACE LTD

1270 ABERDEEN  
HAWKESBURY, ON K6A 1K7  
CANADA

TW METALS  
PO BOX 933014  
ALTANTA, GA 31193-3014  
US

FEB 08 2017

E-MAILED

**Contact Name**

**Vendor Phone** 585 768 5600

**Ship To Contact**

**Ship To Phone**

**Ship Via:** YRC COLLECT

**Ship Acct:**

**Buyer**

Chantal Lavoie

**Customer POID**

**Customer Tax #** 10127-2607

**Terms** Net 30

**Currency** USD

**FOB** FCA - (Free Carrier)

Line Nbr	Reference Vendor Part Number Line Comments Delivery Comments	Description/ Mfg ID	Req Date/ Taxable Promise Date	CD	Req Qty/ Unit of Measure	PO Unit Price	Extended Price
1	M304TR0.500W.035	304 RD Tube .500 x .035W	2/15/2017 Yes 2/15/2017		40.00 f	\$1.50	\$60.00
MATERIAL: AISI 304/316 SA SEAMLESS ROUND TUBING AS PER ASTM A213 OR AMSE SA213 OR ASTM A269							
Line Total:							\$60.00
2	M304TR0.500W.049	304 RD Tube .500 x .049W	2/15/2017 Yes 2/15/2017		20.00 f	\$2.80	\$56.00
MATERIAL: AISI 304/316 SA SEAMLESS ROUND TUBING AS PER ASTM A213 OR AMSE SA213 OR ASTM A269							
Line Total:							\$56.00
3	M304TR0.750W.049	304 RD Tube .750 x .049W	2/15/2017 Yes 2/15/2017		80.00 f	\$2.10	\$168.00
MATERIAL: AISI 304/316 SA SEAMLESS ROUND TUBING AS PER ASTM A213 OR AMSE SA213 OR ASTM A269							

6817-02-14

Note:

2/9/2017



Dart Aerospace Ltd.  
1270 Aberdeen Street  
Hawkesbury, ON K6A 1K7  
Tel: 613 632 9577  
Fax: 613 632 1053

## PURCHASE ORDER

Purchase Order ID **PO35245**

Purchase Order Date 2/8/2017

PO Print Date 2/9/2017

Page Number 2 of 5

**Order From :**

VU-TWM001

**Ship To :** DART AEROSPACE LTD

1270 ABERDEEN  
HAWKESBURY, ON K6A 1K7  
CANADA

TW METALS  
PO BOX 933014  
ALTANTA, GA 31193-3014  
US

**Contact Name**

**Vendor Phone** 585 768 5600

**Ship To Contact**

**Ship To Phone**

**Ship Via:** YRC COLLECT

**Ship Acct:**

**Buyer**

Chantal Lavoie

**Customer POID**

**Customer Tax #**

10127-2607

**Terms**

Net 30

**Currency**

USD

**FOB**

FCA - (Free Carrier)

				<b>Line Total:</b>	<b>\$168.00</b>
4	M6061T6T0.375W.058	6061-T6 RD Tube .375 x.058W	2/15/2017	48.00	\$2.15
					\$103.20

Yes

f

2/15/2017

MATERIAL: 6061-T6/T62/T6510/T6511 SEAMLESS TUBING  
AS PER WW-T-700/6 OR QQ-A-200/8 OR QQ-A-225/8 OR  
AMS 4080 OR AMS 4082 OR AMS 4083 OR ASTM B210 OR  
ASTM B241

				<b>Line Total:</b>	<b>\$103.20</b>
5	M6061T6T0.625W.125	6061-T6 RD Tube 0.625 X.125W	2/15/2017	24.00	\$5.15
					\$123.60

Yes

f

2/15/2017

MATERIAL: 6061-T6/T62/T6510/T6511 SEAMLESS TUBING  
AS PER WW-T-700/6 OR QQ-A-200/8 OR QQ-A-225/8 OR  
AMS 4080 OR AMS 4082 OR AMS 4083 OR ASTM B210 OR  
ASTM B241

**Line Total:**

**\$123.60**

**Note:**

2/9/2017



Dart Aerospace Ltd.  
1270 Aberdeen Street  
Hawkesbury, ON K6A 1K7  
Tel: 613 632 9577  
Fax: 613 632 1053

## PURCHASE ORDER

Purchase Order ID **PO35245**

Purchase Order Date 2/8/2017

PO Print Date 2/9/2017

Page Number 3 of 5

**Order From :**

VU-TWM001

TW METALS  
PO BOX 933014  
ALTANTA, GA 31193-3014  
US

**Ship To :** DART AEROSPACE LTD

1270 ABERDEEN  
HAWKESBURY, ON K6A 1K7  
CANADA

**Contact Name**

**Vendor Phone** 585 768 5600

**Ship To Contact**

**Ship To Phone**

**Ship Via:** YRC COLLECT

**Ship Acct:**

**Buyer**

Chantal Lavoie

**Customer POID**

**Customer Tax #** 10127-2607

**Terms** Net 30

**Currency** USD

**FOB** FCA - (Free Carrier)

7	M304TR0.375W.035	304 TUBING .375 x .035w	2/15/2017	20.00	3.75	75.00
			Yes	f		
			2/15/2017			

MATERIAL: AISI 304/316 SA SEAMLESS ROUND TUBING  
AS PER ASTM A213 OR AMSE SA213 OR ASTM A269

**Line Total:** \$75.00

8	M304TR0.375W.065	304 RD Tube .375 x .065W	2/15/2017	20.00	1.86	37.21
			Yes	f		
			2/15/2017			

MATERIAL: AISI 304/316 SA SEAMLESS ROUND TUBING  
AS PER ASTM A213 OR AMSE SA213 OR ASTM A269

**Line Total:** \$37.21

9	M4130NT0.500W.049	4130 RD Tube .500 x.049W	2/15/2017	20.00	3.88	77.67
			Yes	f		
			2/15/2017			

MATERIAL: AISI 4130N SEAMLESS STEEL TUBING  
AS PER MIL-T-6736 OR AMS 6371/6360/6361  
6362/6373/6374

**Note:**

SP7-0214

2/9/2017



Dart Aerospace Ltd.  
1270 Aberdeen Street  
Hawkesbury, ON K6A 1K7  
Tel: 613 632 9577  
Fax: 613 632 1053

## PURCHASE ORDER

Purchase Order ID **PO35245**

Purchase Order Date 2/8/2017

PO Print Date 2/9/2017

Page Number 4 of 5

**Order From :**

VU-TWM001

TW METALS  
PO BOX 933014  
ALTANTA, GA 31193-3014  
US

**Ship To :** DART AEROSPACE LTD

1270 ABERDEEN  
HAWKESBURY, ON K6A 1K7  
CANADA

**Contact Name**

**Vendor Phone** 585 768 5600

**Ship To Contact**

**Ship To Phone**

**Ship Via:** YRC COLLECT

**Ship Acct:**

**Buyer**

Chantal Lavoie

**Customer POID**

**Customer Tax #** 10127-2607

**Terms**

Net 30

**Currency**

USD

**FOB**

FCA - (Free Carrier)

10 M4130NT1.000W.120

4130 RD Tube 1.00 x  
.120wall

2/15/2017

20.00

\$2.89

\$57.72

Yes

2/15/2017

MATERIAL: AISI 4130N SEAMLESS STEEL TUBING  
AS PER MIL-T-6736 OR AMS 6371/6360/6361  
6362/6373/6374

Line Total:

\$77.67

11 71401-45

PROCUREMENT  
QUALITY CLAUSES

2/15/2017

1.00

\$0.00

\$0.00

No

2/15/2017

**Procurement Quality Clauses**

A005 right of entry

A012 chemical and physical test report

A016 personnel qualification

A017 raw material identification (as applicable)

A026 certification of material conformance

A041 quality management system

A042 dart notification by supplier

A043 retention of quality documents

Line Total:

\$57.72

**Note:**

2/9/2017



Dart Aerospace Ltd.  
1270 Aberdeen Street  
Hawkesbury, ON K6A 1K7  
Tel: 613 632 9577  
Fax: 613 632 1053

## PURCHASE ORDER

Purchase Order ID **PO35245**

Purchase Order Date 2/8/2017

PO Print Date 2/9/2017

Page Number 5 of 5

Order From :  
TW METALS  
PO BOX 933014  
ALTANTA, GA 31193-3014  
US

VU-TWM001

Ship To : DART AEROSPACE LTD  
1270 ABERDEEN  
HAWKESBURY, ON K6A 1K7  
CANADA

Contact Name  
Vendor Phone 585 768 5600  
  
Ship To Contact  
Ship To Phone  
Ship Via: YRC COLLECT  
Ship Acct:

Buyer Chantal Lavoie  
Customer POID  
Customer Tax # 10127-2607  
Terms Net 30  
Currency USD  
FOB FCA - (Free Carrier)

Line Total: \$0.00

PO Total: \$758.40

Note: Terms & Condition of Purchasing(Suppliers) and Procurement Quality Clauses are an integral part of our AS9100 requirements. To learn in detail, please visit [www.dartaerospace.com](http://www.dartaerospace.com) for further explanation.

Change Nbr: 2

Change Date: 2/9/2017